NEWS RELEASE

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Curtiss-Wright Collaborates with Northrop Grumman to Migrate Legacy Real-time Avionics Software to Modern Hardware with Breakthrough Virtualization Technology

Select Curtiss-Wright SBCs now support Northrop Grumman's Real-time Virtualization And Modernized Protection technology to mitigate hardware obsolescence and ease sustainment of legacy software without needing to re-write a single line of software code

ASHBURN, Va. – February 9, 2022 – Curtiss-Wright's Defense Solutions division, a leading supplier of modular open systems approach (MOSA) based rugged avionics solutions engineered to succeed, today announced that it is collaborating with Northrop Grumman to bring Real-time Virtualization And Modernized Protection (ReVAMP) technology to the embedded avionics market. Northrop Grumman's ReVAMP software brings the advantages of enterprise virtualization and layers of cyber hardening to embedded systems to decouple software from specific hardware configurations and combat obsolescence. The use of ReVAMP effectively "future-proofs" software systems by virtualizing obsolete hardware currently being used to run existing software. Northrop Grumman has enabled multiple programs to migrate their valuable application software from obsolete hardware to modern hardware using ReVAMP. One specific program, for example, was able to use ReVAMP to migrate its application code, which was hosted on obsolete, no longer available hardware, so that it now runs, unchanged, on the latest Curtiss-Wright processing module technology, with underlying hardware technology dissimilar to the original host module. This approach both protected the customer's software investment and supported their migration to next generation form factors through virtualization. Using ReVAMP, programs can move trusted and proven applications from legacy cPCI, VXS, or similar form factors, to a contemporary VME, OpenVPX™, or XMC module from Curtiss-Wright, to both improve the performance of avionics systems and drastically reduce sustainment costs.

“We are excited to announce support for Northrop Grumman’s ReVAMP virtualization software, a true game-changer for modernizing legacy embedded avionics applications, on select Curtiss-Wright single board computers,” said Chris Wiltsey, Senior Vice President and General Manager, Curtiss-Wright Defense Solutions. “ReVAMP greatly simplifies and lowers the cost of sustaining legacy real-time embedded systems. With ReVAMP supported on a wide range of our VME, VPX and XMC boards we provide our avionics customers with a simple and proven path for obsolescence mitigation and technology refresh that enables them to use legacy software on contemporary processor hardware without changing a single line of their application code.”

About Northrop Grumman ReVAMP

ReVAMP enables technology refresh and mitigates product obsolescence by simplifying the migration of legacy real-time software applications to modern hardware platforms without requiring any changes to the existing software code. For many older systems, the risks and high costs associated with re-configuring legacy software to run on a new hardware platform can be a significant and daunting barrier. ReVAMP eliminates these hurdles with a model-based systems engineering (MBSE) approach that virtualizes embedded systems at the processor level, so existing software binaries can run on new dissimilar hardware.

What’s more, ReVAMP enables cybersecurity to be added to legacy software so older software applications can meet current cyber security standards, all while eliminating the need to re-write or re-architect the entire system. It provides a secure enclave execution environment that creates a layer of protection from outside threats, and enables secure boot and hardware-supported encryption to be added once the legacy software runs in a ReVAMP virtual environment.

With ReVAMP there is no need to replace existing software tools. ReVAMP provides diagnostic interfaces for creating new and custom diagnostic tools where legacy tools may have lacked. It also eliminates the challenge of porting older software applications to new hardware and operating system environments, which is difficult when the documentation for software a decade or older is incomplete or no longer available.

ReVAMP delivers new capabilities to legacy software. It enables legacy real-time software to take advantage of modern processing capability and memory resources without disturbing the old code and enables the older application to access modern data interfaces such as Ethernet or PCIe. From

the application lifecycle perspective, the ReVAMP software's use of hardware abstraction makes it possible to easily migrate to new generation hardware platforms, every five or ten years as needed for example, without having to re-configure the software.

A Trusted Proven Open Standards Leader

Curtiss-Wright is an active contributor to the definition and advancement of open standards in support of MOSA. Curtiss-Wright has been a leading contributor to the VITA Standards Organization (VSO) that oversees the definition of the OpenVPX, PMC, XMC, and FMC form factor standards. This makes Curtiss-Wright ideally positioned to work with customers and help guide the development and success of their open standards-based applications.

Northrop Grumman will provide support for system integrators looking to use ReVAMP to modernize their legacy solutions to more recent modules from Curtiss-Wright. For more information on which Curtiss-Wright modules support ReVAMP, please download the product sheet here. Please contact your local Curtiss-Wright sales person to get more information on potential hardware migration options for your legacy system and for further information on the engagement process. For more information about ReVAMP contact Northrop Grumman at SMMPC@ngc.com.

For additional information, please visit https://www.curtisswrightds.com, LinkedIn, and Twitter @CurtissWrightDS.

About Curtiss-Wright Corporation

Curtiss-Wright Corporation is a global innovative company that delivers highly engineered, critical function products and services to the commercial, industrial, defense and energy markets. Building on the heritage of Glenn Curtiss and the Wright brothers, Curtiss-Wright has a long tradition of providing reliable solutions through trusted customer relationships. The company is headquartered in Davidson, N.C., and employs approximately 8,200 people worldwide. For more information, visit https://www.curtisswright.com/.

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